REMARKS

Claims 1-53 are presently pending in the application. Applications amend claims 1, 26, 28-31, 35, 43, 51, and 52, and cancel claim 27. Support for the amendments can be found, e.g., on pages 3-7, 131-137, in the original claims and throughout the remainder of the specification. Thus, no new matter is added. The application is believed to be in condition for allowance. Hence, reconsideration and allowance are respectfully requested.

Information Disclosure Statement

In response to the objection to the information disclosure statement (IDS) filed on 12/4/2000, Applicants attach a legible copy of each reference cited in this IDS. Applicants respectfully request that the information contained in these references be considered. If the Examiner still finds some references illegible, Applicants respectfully request that the Examiner identify these references so that they can be resubmitted without the need to resubmit all of the references.

Drawings

In response to the objection raised with regard to FIGURE 3, the description of the MPLS and IP applications on page 15, lines 23-24 of the specification is amended, as listed above, to correspond to the labels of the MPLS and IP applications provided in FIGURE 3. This amendment to the specification is believed to obviate the need to provide a replacement figure.

Specification

A revised abstract is provided as shown above that complies with the requirement that it not exceed 150 words in length.

The specification is further amended as listed above to address the objections raised by the Examiner, including those regarding the reference numerals for the MPLS and IP applications provided on page 15, lines 23-24. The amendments are believed to overcome these objections.

Rejections Under 35 U.S.C. § 112

The Office Action rejects claim 43 as failing to comply with the enablement requirement of Section 112.

In response, claim 43 is amended as indicated above. Amended claim 43 depends on claim 35, and further recites programming a cross-connection subsystem to provide connections between a transmitter of the upper layer subsystem and a connection of the working port for transmitting data to another network device and between a receiver of the upper layer subsystem and a connection of the test port for receiving data from another network device.

Claim 43, as amended, indicates a cross-connection subsystem can be program to provide a data path between the upper layer subsystem and the working port for transmission to an external network device and to provide a data path from the test port and the upper layer subsystem for sending data, e.g., test data, received through the test port from an external network attachment. There is ample teaching in the specification for the subject matter of claim 43. For example, Applicants refer the Examiner to pages 132-137 (e.g., the last paragraph on page 135) for these teachings.

In response to the rejection of claim 10, the phrase "the portion of the network data" is amended to recite a "a portion of the network data." In response to the rejection of claim 34, the phrase "the cross-connection card" is replaced with "the cross-connection subsystem" for which claim 31, on which claim 34 depends, provides antecedent basis.

Rejections Under 35 U.S.C. § 102

The Office Action rejects claims 1, 2, 10-15, 17, 18, 22, 26-29, 31, 32, 34-45, 47-49 and 51-53 as being anticipated by U.S. Patent Application No. 2003/0012196 of Ramkrishnan.

Claim 1, as amended, recites a network device that includes a physical layer subsystem for transferring network data in accordance with a physical layer protocol. The physical layer subsystem can include a physical layer working port that is capable of being connected to a first physical network attachment. The device further includes an upper layer subsystem, coupled with the physical layer subsystem, for transferring the network data in accordance with an upper

layer protocol. The physical layer subsystem further includes a physical layer test port, coupled to the physical layer subsystem and the upper layer subsystem, that is capable of being connected to a second physical network attachment. *The test port can be programmed to function as a working port of the device.* Support for the amendment to claim 1 can be found, e.g., on page 131, and 134-136. Thus, no new matter is added.

Ramkrishnan is directed to a promiscuous monitoring system in a switched network device, which can include one or more monitor output ports to which copies of data packets received at one or more input ports can be routed by an interconnection network element of the device. The monitor ports can be connected to a monitor processor that can monitor network traffic data received through the respective input ports.

The monitor ports in Ramkrishnan are understood to be *dedicated* ports that can only be utilized for monitoring of the network traffic data. In other words, Ramkrishnan does not indicate that its monitoring ports can be programmed to be utilized as working input or output ports. In fact, Applicants explain that dedicated test ports generally contain "specialized hardware that is different from the working ports and, thus, cannot be used as a working port." *See*, specification, page 134. In contrast, amended claim 1 expressly recites that the test port can be programmed to function as a working port. This provides considerable flexibility not provided in the device of Ramkrishnan. For example, if more working ports are needed (e.g., as a result of failure of some ports or increased data traffic) the test port can be reprogrammed to be used for normal data transfer.

Hence, amended claim 1 distinguishes patentably over Ramkrishnan. Further, claims 2-25 depend either directly or indirectly on claim 1, and hence are also patentable.

Claims 26, as amended, recites a network device that comprises an upper layer subsystem for transferring network data in accordance with an upper layer protocol, and a physical layer subsystem for transferring the network data with the upper layer subsystem. The physical layer subsystem includes a plurality of ports that are capable of being connected to physical network attachments. One or more of the ports are designated as physical layer test ports while others are designated as working ports. At least one of the test ports is capable of

being programmed to function as a working port. The network device further includes a cross-connection subsystem for transferring the network data between the upper layer subsystem and the working ports and for multicasting a portion of the network data to at least one of the test ports. Further, the *cross-connection subsystem is capable of programming the test port, which is capable of functioning as working port, to function as a working port.*

The arguments presented above with respect to independent claim 1 apply with equal force to establish that claim 26 is also patentable. As noted above, the test port(s) in the device of Ramkrishnan cannot be programmed to function as working ports. In other words, there is no indication that the interconnect network element of Ramkrishnan is capable of programming the monitor port to function as a working input or output port. In contrast, amended claim 26 recites that the cross-connect subsystem can program at least one of the test ports to function as a working port, thereby providing advantages described above.

Claim 27 is canceled as its features are now incorporated in amended claim 26. Further, claims 28-30 depend on claim 26, and hence are also patentable.

Claim 31, as amended, recites a network device that includes an upper layer subsystem for transferring network data in accordance with an upper layer protocol, and a physical layer subsystem that includes a plurality of ports capable of being connected to physical network attachments. The plurality of ports can include a working port and a test port. The device further includes a cross-connection subsystem, which is coupled to the upper layer subsystem and the physical layer subsystem, and is capable of being programmed to transfer the network data between the upper layer subsystem and the working port and to multicast a portion of the network data to the test port. Moreover, at least one of the network attachments is a test equipment and the test port is capable of *transmitting test data from the network equipment to the physical layer subsystem and/or the cross-connection subsystem.*

In Ramkrishnan device, the monitor port *receives* a copy of data packets from the input ports or the output ports. There is, however, no indication that the monitor port can transmit test data from the external monitor to the ports or the inteconnect network element. In fact, there is no teachings, or even a suggestion, in Ramkrishnan regarding transmitting test data from an

external test equipment to the network device, let alone configuring the monitor port to transmit such test data from the test equipment to one or more elements of the device.

Hence, claim 31 and claims 32-34, which depend on claim 31, distinguish patentably over the teachings of Ramkrishnan.

Claim 35, as amended, recites a method of operating a network device that includes transferring network data between a physical layer working port within a physical layer subsystem and a physical network attachment that is capable of being coupled with another network device, and transferring the network data between the working port and an upper layer subsystem. The method further calls for providing another port within the physical layer subsystem that is capable of being programmed to function as a test port or another working port, and programming this port to function as a test port. A copy of a portion of the network data, which is transferred between the working port and the upper layer subsystem, is sent to the physical layer test port.

As noted above, Ramkrishnan does not teach providing a port that can be programmed to function as a working port or a test port. In contrast, amended claim 35 expressly recites a step of providing a port within the physical layer subsystem that is capable of being programmed to function as a working port or a test port. Hence, claim 35 and claims 36-44, which depend either directly or indirectly on claim 35, distinguish patentably over Ramkrishnan.

Claim 45 recites a network device having a plurality of ports that are capable of being connected to external physical network attachments and are capable of being programmed as test ports or working ports.

As discussed in detail above, Ramkrishnan does not indicate that its monitor port can be programmed to function as a working port or that one of its input or output ports can be programmed to function as a monitor port. Hence, Ramkrishnan fails to teach material features of claim 45. Thus, claim 45 and claims 46-50, which depend either directly or indirectly on claim 45, are patentable over Ramkrishnan.

Claim 51 recites a network device that includes a physical layer subsystem including a plurality of ports that are capable of being connected to physical network attachments. The plurality of ports include at least one working port and at least one test port. The network device further includes a cross-connection subsystem that is coupled to the physical layer subsystem and is capable of being programmed to transfer the network data to the working port and to the test port. Further, the cross-connection subsystem is capable of configuring the test port to function as another working port.

The arguments presented above apply with equal force to establish that claim 51 is also patentable over Ramkrishnan.

Claim 52, as amended, recites a network device that includes a physical layer subsystem including a plurality of ports and a cross-connect subsystem coupled to the physical layer subsystem and capable of being configured to implement at least one of the plurality of ports as a working port and at least another of the plurality of ports as a test port. Further, the cross-connect subsystem is capable of reprogramming the test port as another working port.

The arguments presented above apply with equal force to establish that claim 52 is also patentable over Ramkrishnan. Hence, claim 52 and claim 53, which depends on claim 52, distinguish patentably over Ramkrishnan.

Rejections Under 35 U.S.C. § 103

The Office Action rejects claims 3-7, 16, 19-21, 23-25, 30, 33, 46, and 50 as being unpatentable over U.S. Patent Application No. 2003/0012196 of Ramkrishnan.

Claims 3-7, 16, 19-21, and 23-25 depend on independent claim 1 and hence incorporate its features. As discussed above, Ramkrishnan does not teach at least one material element of claim 1, namely, a test port that can be programmed to be utilized as a working port. Further, the Examiner does not provide any other references that would bridge the gap in the teachings of Ramkrishnan. Accordingly, similar to claim 1, claims 3-7, 16, 19-21, and 23-25 also patentable.

Claim 30 depends on independent claim 26, and hence contains all the features of claim 26. As discussed above, Ramkrishnan does not teach features of claim 26 (and hence those of claim 30) such as at least one test port that is capable of being programmed to function as a working port and a cross-connection subsystem that is capable of programming the test port to function as a working port. Hence, similar to claim 26, claim 30 is also patentable over Ramkrishnan.

Claim 33 depends on independent claim 31. As discussed above, Ramkrishnan does not teach transmitting test data from an external test equipment to the network device – a feature recited in claim 31. Since claim 33 contains all of the features of claim 31, it is also patentable over the cited reference.

Claims 46 and 50 depend on independent claim 45 and hence incorporate its features. Thus, the arguments presented above with respect to claim 45 also apply to establish that claims 46 and 50 are patentable over the teachings of Ramkrishnan.

The Office Action rejects claims 8 and 9 as being unpatentable over U.S. Patent Application No. 2003/0012196 of Ramkrishnan in view of U.S. Patent No. 6,529,473 of Bavant et al.

Claim 8 and 9 depend on independent claim 1 and contain all the features of claim 1. As discussed above, Ramkrishnan does not teach the following features of claim 1: a test port that can be programmed to be utilized as working port.

The secondary reference, Bavant, does not remedy this deficiency of Ramkrishnan. Bavant is directed to a distributed-architecture device for switching ATM cells. Bavant does not teach or suggest a test port, and certainly not one that can be programmed as a working port. Hence, claims 8 and 9 are patentable over the cited references.

Conclusion

In view of the above amendments and remarks, Applicant respectfully requests reconsideration and allowance of the application. If there are any remaining issues, the Examiner is invited to call the undersigned at 617-439-2514.

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Respectfully submitted,

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